

1. A method of cementing a subterranean zone penetrated by a well bore comprising the steps of:

(a) preparing a cement composition comprising a hydraulic cement, a biodegradable dispersant comprised of polyaspartic acid containing side chains formed by reacting one or more side chain forming chemicals therewith and sufficient water to form a pumpable slurry;

(b) placing said cement composition in said zone to be cemented; and

(c) allowing said cement composition to set into an impermeable solid mass therein.

2. The method of claim 1 wherein said one or more side chain forming chemicals are selected from the group consisting of ethylene oxide, propylene oxide, a vinyl functional polyethylene glycol, a vinyl functional polypropylene glycol, an amino functional polyethylene glycol, a polyester, a polyamide, polyethylene oxide and polypropylene oxide.

3. The method of claim 1 wherein said side chain forming chemical is ethylene oxide.

4. The method of claim 1 wherein said side chain forming chemical is a vinyl functional polyethylene glycol.

5. The method of claim 1 wherein said side chain forming chemical is a vinyl functional polypropylene glycol.

6. The method of claim 1 wherein said side chain forming chemical is an amino functional polyethylene glycol.

7. The method of claim 1 wherein said side chain forming chemical is a polyester.

8. The method of claim 1 wherein said side chain forming chemical is a polyamide.

9. The method of claim 1 wherein said side chain forming chemical is polyethylene oxide.

10. The method of claim 1 wherein said dispersant has a molecular weight in the range of from about 5,000 to about 500,000 daltons.

11. The method of claim 1 wherein said dispersant has a molecular weight of about 10,000 daltons.

12. The method of claim 1 wherein said dispersant is present in said composition in an amount in the range of from about 0.1% to about 2.0% by weight of cement therein.

13. The method of claim 1 wherein said hydraulic cement is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, alumina cements and silica cements.

14. The method of claim 1 wherein said hydraulic cement in said composition is Portland cement.

15. The method of claim 1 wherein said water in said composition is selected from the group consisting of fresh water, unsaturated salt water and saturated salt water.

16. The method of claim 1 wherein said water is present in said composition in an amount in the range of from about 18% to about 110% by weight of cement therein.

17. The method of claim 1 wherein said composition further comprises a fluid loss control agent selected from the group consisting of hydroxyethylcellulose, hydroxymethylcellulose, carboxymethylhydroxyethylcellulose, hydroxypropylcellulose, a copolymer of 2-acrylamido-2-methyl propane sulfonic acid and N,N-dimethylacrylamide, a graft lignin a lignite polymer, starch, guar, hydroxypropylguar, polyethyleneimine, polyvinylalcohol, polyvinylacetate, carragenan and xanthane.

18. The method of claim 1 wherein said fluid loss control agent in said composition is hydroxyethylcellulose.

19. The method of claim 1 wherein said fluid loss control agent is present in said composition in an amount in the range of from about 0.2% to about 2.0% by weight of cement therein.